CENTRAL INTELLIGENCE AGENCY

# INFORMATION REPORT



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SECURITY INFORMATION

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General Information

1. The Order of Lenin and Order of the Labor Red Banner Agricultural Equipment Factory i/n Ukhtomskiy No. 711 is located at Lyubertsy, Moscow Oblast. Branch railroad lines enter the factory yard, where there is a well-equipped platform for loading machinery on flatcars. In 1951 a special conveyor was installed for delivering machines from the storerooms and assembly shops to the platform. The factory belongs to the Ministry of Agricultural Machinery Building and is directly subordinate to the Chief Directorate of Harvesting Machinery (Glavuborochmash) of the ministry. Both the ministry and the Chief Directorate of Harvesting Machinery are located at 20 Kirov Ulitsa (formerly Myasnitskaya Ulitsa), Moscow.

History

2. The factory was established in 1902 by an American company, for the production of agricultural harvesting machinery, and, except for the war years 1941-1945, specialized in this type of machinery. Prior to 1931 production methods were somewhat primitive, especially in the foundries, and, in addition, equipment was obsolete. In 1931 the factory was completely overhauled, a large quantity of new equipment was installed, and mechanized methods of production were introduced. The foundries were reconstructed and the factory became well known for the quality of its wrought and gray iron castings. New production buildings also were built. Agricultural machinery produced by the factory before the war included Novyy Ideal mowers (senokosilka), the production of which was stopped in 1951, ZhL-16 hand-reapers (zhatka lobogreyka), LT-7 flax-pullers (lnoterebilka), and Northern Combine harvesters (Severnyy Kombayn). The Northern Combine harvester, which has not been produced since the war, is a motorless, trailer combine-harvester used for harvesting in the northern areas of the USSR where the grain has a greater moisture content and where the terrain is more broken than in the south. In addition a large quantity of spare parts for agricultural machinery was manufactured. 25X1

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3. In autumn 1941 about half the technical and other personnel and three-quarters of the factory equipment were evacuated and replaced by other equipment and workers. The factory then switched over to the production of mines of various types and sizes and came under the Commissariat of Trench Mortar Armament. The director of the factory at that time was N.A. Volkov. Mass production equipment for the production of mines was introduced, new workers acquired experience, and by 1943-1944 the plant employed 11,000 workers and was one of the most important mine factories belonging to the commissariat. On many occasions the factory received first prize in competitions with other factories belonging to the commissariat and at the end of 1942 was awarded the Order of the Labor Red Banner. After the war the factory received for permanent retention the Challenge Red Banner of the Central Committee of the Communist Party. Also, in 1941, on instructions from the commissariat, the factory set up an independent shop for the production of machine tools for its own requirements, as well as for other factories. In 1942, while still engaged in war production, the plant began the production, in small quantities, of spare parts for agricultural machinery and by 1943 was turning out a few hand-reapers and horse-drawn, Novyy Ideal mowers. At the beginning of 1944 two shops for the production of agricultural machinery were set up and, in the same year, some of the specialists, including engineer-designer Mayat and engineers Galusakin, Berg, and Mints, in addition to other workers, returned to the factory. The factory then took up mass production of horse-drawn mowers and hand-reapers, a new binder (snopovyazalka) was evolved by the Design Bureau, and the output of spare parts for agricultural machinery increased considerably. In 1944 the production of machine tools continued to expand and in 1944 and 1945 the factory was mass-producing 2125-type vertical drills, four-spindle aggregate machines for drilling frames for the binding mechanism of the IM-5 tractor-drawn binder, special grinding machines (zatochnyy stanok), etc. Most of the machine tools were sent to agricultural machinery factories which were being constructed at Rostov-na-Donu and Voronezh. In the middle of 1945 several of the shops were producing consumer goods and at the end of 1945 a special Consumer Goods Shop (Tsekh Shirpotreba), which produced mainly hardware and, to a lesser extent, wooden articles such as stools, tables, etc, was established.

4. In 1946 the factory completed a switchover to peacetime production. At first the production of agricultural machinery was slow and the factory was unable to fulfill the plan, either with regard to output or cost of production. Rejections were numerous, especially in the foundries. A State subsidy amounting to tens of millions of rubles was obtained. Director Volkov left and was replaced by a director named Guk, fnu, who was replaced in 1947 by a director named I.P. Krysin. Krysin set to work at once to eliminate defects. Machine tools were overhauled, new, special machine tools were introduced, conveyor equipment installed, and the foundries put in order. A large amount of this work was done by Chief Engineer Mayat, the Chief Mechanical Engineer's Section (Otdel Glavnogo Mekhanika), and Engineering Repair Shop No. 26 (Remontno-Mekhanicheskiy Tsekh No. 26). In April 1947 the factory started to fulfill its program and later overfulfilled it. In the course of the post-war Five-Year Plan a considerable improvement took place in the organization of labor, a large number of conveyor belts was introduced into the shops, and mechanized, and in some cases automatic, production processes introduced. This resulted in increased production, coupled with a reduction in labor. Most of the new equipment in the foundries, which were partly mechanized, was made in the factory.

Types of Production

5. a. Horse-drawn mower, Novyy Ideal (konnaya kosilka Novyy Ideal). Production ceased in 1951.

   b. Improved horse-drawn mower K-1.4 (usovershenstvovannaya konnaya kosilka)

   c. Tractor-drawn trailer mower K-2.1 (pritsepnaya traktornaya kosilka)

   d. Tractor-carried hanging mower KN-2.1 (navesnaya traktornaya kosilka)

   e. Self-propelled mower KS-1.0 (samokhodnaya kosilka)

   f. Tractor-drawn, three-stage mower K-6 (traktornaya trekhyarusnaya kosilka)

g. Hand-reaper ZhL-1.6 (zhatka lobogreyka). Production ceased in 1951.

h. Reaper and binder ZhS-1.8 (zhatka snopovyazalka)

i. Tractor-drawn reaper and binder ZhS-3.0 (zhatka snopovyazalka traktornaya pravorezhushchaya)

j. Modified reaper and binder ZhS-3.0 (vidoizmemennaya zhatka snopovyazalka)

k. Flax puller LT-7 (1947) (lnoterebilka)

l. Flax combine LK-7 (lnokombayn)

m. Hemp binders KS-2.3 and KS-2.3M (konoplesnopovyazalka)

n. Hemp-spreading machine KR-2.3 (also called ZhVK-2.3) (konoplerasstilochnaya mashina)

o. Tractor-carried, hanging sweep rake VN-3 (traktornaya navesnaya volokusha)

p. Lateral rake and tedder VG-1.5 (bokovyye grabli-valkooborachivateli)

q. Pickup press PP-2 (press podborshchik)

r. Pickup and ricking machine (kopnitel podborshchik)

Production

6. 1946:

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|---|---|
| Novyy Ideal, horse-drawn mowers | 23,000 |
| Hand-reapers ZhL-1.6 | 9,000 |
| Reaper and binder mass-produced on trial on a small scale; spare parts for agricultural machinery | |

1947:

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|---|---|
| Novyy Ideal mowers | 44,000 |
| Hand-reapers ZhL-1.6 | 21,000 |
| Reaper and binder ZhS-1.8 | 2,900 |
| Hemp binders KS-2.3 | about 1,200 |
| Spare parts for agricultural machinery; malleable iron castings for other agricultural machinery factories. | |

1948:

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|---|---|
| Novyy Ideal mowers | 68,000 |
| Horse-drawn mowers K-1.4 trial mass-produced on a small scale | |
| Hand-reapers ZhL-1.6 | 38,000 |
| Reaper and binder ZhS-1.8 | 5,000 |
| Hemp binders KS-2.3 | 1,500 |
| Hemp-spreading machines KR-2.3 | about 1,200 |
| Tractor-drawn trailer mowers K-2.1 mass-produced on a small scale | |
| Self-propelled mowers KS-10, experimental series | |
| Tractor-carried hanging mowers KN-2.1, experimental series | |
| Flax pullers LT-7, small series | |
| Spare parts for agricultural machinery | |
| Malleable iron castings | |
| Crankcases for self-propelled combines for other factories | |

1949:

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|---|---|
| Novyy Ideal mowers | about 50,000 |
| Horse-drawn mowers K-1.4 | 28,000 |
| Tractor-drawn trailer mowers K-2.1 | 5,500 |
| Tractor-carried hanging mowers, small series | 2,000 |
| Hand-reapers ZhL-1.6 | 32,000 |

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|---|---|
| Reaper and binder ZhS-1.8 | 9,000 |
| Flax pullers LT-7 | 8,000 |
| Hemp binders KS-2.3 | 2,500 |
| Hemp-spreading machines KR-2.3 | 2,500 |
| Self-propelled mowers KS-10, experimental series | |
| Spare parts for agricultural machinery | |
| Crankcases for combines | |
| Castings | |

1950:

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|---|---|
| Novyy Ideal mowers | 33,000 |
| Horse-drawn mowers K-1.4 | 42,000 |
| Tractor-drawn trailer mowers K-2.1 | 8,000 |
| Tractor-carried hanging mowers KN-2.1 | 7,000 |
| Hand-reapers ZhL-1.6 | 24,000 |
| Reaper and binder ZhS-1.8 | 18,000 |
| Flax pullers LT-7 | 8,000 |
| Hemp binders KS-2.3 and | |
| Hemp-spreading machines KR-2.3 | 5,500 |
| Self-propelled mowers KS-10 (modified), small series | |
| Spare parts, crankcases, and castings | |

1951:

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|---|---|
| Horse-drawn mowers K-1.4 | 72,000 |
| Tractor-drawn trailer mowers K-2.1 | 13,000 |
| Tractor-carried hanging mowers KN-2.1 | 12,000 |
| Self-propelled mowers KS-10 | 5,000 |
| Flax pullers LT-7 | 8,500 |
| Reaper and binder ZhS-1.8 | 12,000 |
| Tractor-drawn, three-stage mowers K-6, small series | |
| Flax combines LK-7, small series | |
| Hemp binders KS-2.3 and | |
| Hemp-spreading machines KR-2.3 | 6,500 |
| New reaper and binder | 4,000 |
| Spare parts, crankcases, and castings | |

1952:

Production approximately the same as in 1951. In June 1952 large-scale mass production of three-stage mowers and flax combines started.

In addition, since 1948 the factory has mass-produced on a small scale the following:

Tractor-carried, hanging sweep rake VN-3
Lateral rake and tedder VG-1.5
Pickup presses PP-2
Pickup and ricking machines
Consumer goods

Personnel

7. The director is Spiridon Mikhailovich Popov. He has been employed in the factory for over 15 years. During the war he held the post of Chief Mechanical Engineer. The factory employs about 7,000 workers, working three shifts, except for two shops which work only two shifts.

Shops and Bureaus

8. a. Mechanical Assembly Shop for Mowers (Mekhanosborochnyy Tsekh Kosilok), in which electric spot-welding (tochechnaya svarka) machines have been installed. This shop has two conveyors for frames, one for mechanical treatment and the other for painting and drying. The manufacture of a K-1.4 mower requires 36 hours from the time that the frame is cast until it is delivered to the railroad platform.

b. Mechanical Assembly Shop for Flax Pullers (Mekhanosborochnyy Tsekh Lnoterebilok), in which electric spot-welding machines have also been installed

c. Mechanical Assembly Shop for Reapers (Mekhanosborochnyy Tsekh Zhatok), in which a semi-automatic line of aggregate machine tools has been fitted for machining frames; electric spot-welding machines have been installed.

d. Mechanical Assembly Shop for Flax-harvesting Combines (Mekhanosborochnyy Tsekh Lnokombaynov), in which spot-welding machines also have been installed (electric)

e. Mechanical Assembly Shop for Three-stage Hay Mowers (Mekhanosborochnyy Tsekh Trekhbrusnyk Senokosilok), in which electric spot-welding machines also have been installed

f. Mechanical Assembly Shop for Experimental Machines (Mekhanosborochnyy Tsekh Opytnykh Mashin), in which electric spot-welding machines have been installed

g. Mechanical Assembly Shop for Machines of Small-scale Mass Production (Mekhanosborochnyy Tsekh Mashin Melkoy Serii), in which electric spot-welding machines have also been installed

h. Cutting Parts Shop (Tsekh Rezhushchikh Chastey), in which the old hardening furnaces have been replaced by mechanism which hardens by means of high-frequency currents. Special, new, semi-automatic machines for grinding and polishing were installed in the middle of 1948 and over 10,000,000 cutting parts are produced annually.

i. Iron foundries: Malleable Iron Foundry (Liteynyy Tsekh Kovkogo Chuguna) and Gray Iron Foundry (Liteynyy Tsekh Serogo Chuguna). In the Malleable Iron Foundry five suspension-type conveyors have been built and a new, continuous furnace (metodicheskaya pech) for tempering has been installed. A so-called "duplex" process for metal smelting has been introduced. In this process the charge is melted in an ordinary cupola furnace, after which molten lead is poured into a reverberatory flame furnace in which it is heated to a temperature of up to 1500°C. When heated to this temperature the iron is mixed with chemical components to produce malleable iron. The chemical components which have proved generally satisfactory are: 2.5% carbon, about 1% silicon, about .65% manganese, about .1% phosphorus, about 1.1% sulphur, and about .08% chromium.

Castings knocked out of molds are cleaned by sand-blasting machines or in drums. Suspension-type conveyors have also been installed in the Gray Iron Foundry. For the preparation of molding earth for these foundries, a centralized plant with a magnetic separator, drum sieve, elevators, conveyors, etc, has been built. Prior to 1948 wheels were cast in the factory yard, but casting is now done in molds moving on roller conveyors. By this method a team of eight workers can mold 270-280 wheels per shift. Mower frame casting is done on roller conveyors. Earth is taken from a bunker and rammed in by means of a pneumatic stamp. Mechanized processes are used for pouring metal into the molds and knocking out the finished castings. One brigade molds up to 140 mower frames per shift. For casting parts of machines which are subject to considerable strain, so-called "modified" iron, with a low carbon content, and containing ferro-silicon or ferro-manganese, is used. The bending strength of this iron is 60-80 kg per square mm, tensile strength 30-48 kg per sq mm, and hardness 220-240. This modified iron often serves as a substitute for structural steel in many parts of agricultural machinery, such as cylindrical gears for gearboxes in the K-1.4 mowers, the essential parts of the KS-10 self-propelled mowers, and of the tractor-drawn trailer mower K-2.1, on the packer shaft (val upakovshchikov) of the hemp binder KS-2.3, and in various gears and sprockets of conveyors, conveyor belt rollers, and other parts.

j. Woodwork shops (Derevoobdelochnyy Tsekh): First Woodwork Shop and Second Woodwork Shop. In 1948 the woodwork shops, which handle about 40,000 cubic meters of timber annually, were expanded, and new equipment for mass production was installed, in addition to electrical apparatus for drying wood.

k. Shaft-drawing Shop (Valovolochilnyy Tsekh). In 1949 the Shaft-drawing Shop was established for producing rods for shafts, rollers, etc. The pickling section of the shop is mechanized and a telpher lowers into the baths bundles of rods weighing up to 1.5 tons.

l. Forge and Press Shop (Kuznechno-Pressovyy Tsekh)

m. Tool Shop (Instrumentalnyy Tsekh)

n. Machine Tool Pattern Shop (Stankomodelnyy Tsekh)

o. Cardan Joint Shop (Tsekh Kardanov)

p. Thermal Shop (Termicheskiy Tsekh)

q. Painting and Packing Shop (Malyarno-Upakovochnyy Tsekh)

r. Hardware shops (Metiznyy Tsekh): First Hardware Shop and Second Hardware Shop. In these shops automatic machinery for producing bolts, rivets, etc, have been installed.

s. Engineering shops (Mekhanicheskiy Tsekh): First, Second, and Third Engineering Shop

t. Engineering Repair Shop (Remontno-Mekhanicheskiy Tsekh)

u. Transport Shop (Transportnyy Tsekh)

v. Consumer Goods Shop (Tsekh Shirpotreba)

w. Special Design Bureau (Spetsialnoye Konstruktorskoye Byuro). This bureau contains a laboratory and employs many experienced designers. Modern methods are employed in the laboratory for measuring static and dynamic loads by means of tensometers and electric indicators. Extensive work in connection with State standards for agricultural machinery is done here. In 1949 many parts of agricultural machinery designed in the bureau were approved and put into production.

x. Bureau for the Establishment of Mechanical and Automatic Technological Processes (Byuro Mekhanizatsii i Avtomatizatsii Tekhnologicheskikh protsessov). This bureau was set up in 1949 and was operating successfully in 1950. As a result of the introduction of mechanical and automatic processes the expenditure of labor on some articles has been reduced by 20-30 per cent.

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